

CLAIMS

1. A computer implemented method, comprising:

receiving user input specifying a warping tool, the warping tool having a perimeter having a shape and a size, the warping tool having one or more associated vectors, each of the vectors originating at a mesh point defined by a tool mesh associated with the warping tool, the user input specifying one or more of the shape of the perimeter, the tool mesh, and the associated vectors.

2. The method of claim 1, further comprising:

applying the warping tool to an image having one or more image regions in response to user input, the application of the warping tool defining a distortion vector at each of one or more image regions based on the shape and the vectors; and

modifying the one or more image regions using the corresponding distortion vectors.

3. The method of claim 2 further comprising:

repeating the applying and the modifying to produce a warping effect.

4. The method of claim 2, further comprising:

displaying a representation of the modified image.

5. The method of claim 1, wherein receiving user input specifying the warping tool comprises:

receiving user input specifying the tool mesh.

6. The method of claim 1, wherein receiving user input specifying the warping tool comprises:

receiving user input defining a strength and/or direction of the one or more associated vectors.

7. The method of claim 6, wherein receiving user input defining the strength and/or direction comprises:

receiving user input defining a rotationally asymmetric distribution for the strengths.

8. The method of claim 6, wherein receiving user input defining the strength and/or direction comprises:

receiving user input defining a rotationally asymmetric distribution for the directions.

9. The method of claim 6, wherein receiving user input defining the strength and/or direction comprises:

receiving user input defining a strength and/or direction that change with time.

10. The method of claim 1, wherein receiving user input specifying the warping tool comprises:

receiving user input specifying a rotationally asymmetric shape of the perimeter.

11. The method of claim 1, wherein receiving user input specifying the warping tool comprises:

receiving user input specifying the shape of the perimeter.

12. The method of claim 1, wherein receiving user input specifying the warping tool comprises:

receiving user input specifying a shape of the perimeter and/or a size that changes with time.

13. The method of claim 11, wherein receiving user input specifying the shape of the perimeter comprises:

receiving user input specifying a triangle, square, hexagon, octagon, rhombus, or parallelepiped.

14. The method of claim 2, wherein applying the warping tool comprises:
applying the warping tool in response to user input defining a movement of the
warping tool from a first location to a second location relative to the image.

15. The method of claim 14, wherein applying the warping tool comprises:
calculating a distortion vector for an image region based on the movement of the
warping tool and one or more associated vectors.

16. The method of claim 15, wherein applying the warping tool includes:
applying the warping tool using a user specified scale factor, the scale factor being
used to scale the strengths associated with the vectors.

17. A computer program product tangibly embodied in a computer readable medium, the
computer program product comprising instructions operable to cause data processing
equipment to:

receive user input specifying a warping tool, the warping tool having a perimeter
having a shape and a size, the warping tool having one or more associated vectors, each of
the vectors originating at a mesh point defined by a tool mesh associated with the warping
tool, the user input specifying one or more of the shape of the perimeter, the tool mesh, and
the associated vectors.

18. The computer program product of claim 17, further comprising instructions operable
to cause the data processing equipment to:

apply the warping tool to an image having one or more image regions in response to
user input, the application of the warping tool defining a distortion vector at each of one or
more image regions based on the shape and the vectors; and

modify the one or more image regions using the corresponding distortion vectors.

19. The computer program product of claim 18, further comprising instructions operable to cause the data processing equipment to:

repeat the applying and the modifying to produce a warping effect.

20. The computer program product of claim 18, further comprising instructions operable to cause the data processing equipment to:

display a representation of the modified image.

21. The computer program product of claim 17, wherein the instructions to receive user input specifying the warping tool cause the data processing equipment to:

receive user input specifying the tool mesh.

22. The computer program product of claim 17, wherein the instructions to receive user input specifying the warping tool cause the data processing equipment to:

receive user input defining a strength and/or direction of the one or more associated vectors.

23. The computer program product of claim 22, wherein the instructions to receive user input specifying the warping tool cause the data processing equipment to:

receive user input defining a rotationally asymmetric distribution for the strengths.

24. The computer program product of claim 22, wherein the instructions to receive user input specifying the warping tool cause the data processing equipment to:

receive user input defining a rotationally asymmetric distribution for the directions.

25. The computer program product of claim 22, wherein the instructions to receive user input specifying the warping tool cause the data processing equipment to:

receive user input defining a strength and/or direction that change with time.

26. The computer program product of claim 17, wherein the instructions to receive user input specifying the warping tool cause the data processing equipment to:
receive user input specifying a rotationally asymmetric shape of the perimeter.

27. The computer program product of claim 17, wherein the instructions to receive user input specifying the warping tool cause the data processing equipment to:
receive user input specifying the shape of the perimeter.

28. The computer program product of claim 17, wherein the instructions to receive user input specifying the warping tool cause the data processing equipment to:
receive user input specifying a shape of the perimeter and/or a size that changes with time.

29. The computer program product of claim 27, wherein the instructions to receive user input specifying the shape of the perimeter cause the data processing equipment to:
receive user input specifying a triangle, square, hexagon, octagon, rhombus, or parallelepiped.

30. The computer program product of claim 18, wherein the instructions to apply the warping tool cause the data processing equipment to:
apply the warping tool in response to user input defining a movement of the warping tool from a first location to a second location relative to the image.

31. The computer program product of claim 30, wherein the instructions to apply the warping tool cause the data processing equipment to:
calculate a distortion vector for an image region based on the movement of the warping tool and one or more associated vectors.

32. The computer program product of claim 31, wherein the instructions to apply the warping tool cause the data processing equipment to:

applying the warping tool using a user specified scale factor, the scale factor being used to scale the strengths associated with the vectors.